

NASA Glenn  
Plum Brook Station

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# Decommissioning NEWS

Plum Brook Station

A quarterly  
newsletter  
to inform the  
public about NASA's  
Decommissioning  
Activities

## NRC APPROVES NASA DECOMMISSIONING PLAN

The U.S. Nuclear Regulatory Commission (NRC) approved NASA's Decommissioning Plan for the closed Reactor Facility at Plum Brook Station on March 20 and amended NASA's current license. NASA submitted its Decommissioning Plan in December 1999 and a Revised Plan in March 2001. Since that time, NASA's Decommissioning Team has responded to NRC questions and submitted additional information and documentation. Decommissioning is now underway, with completion expected by the end of 2007.

According to NASA Decommissioning Project Manager Tim Polich, "We are extremely happy to receive approval from the NRC. The planning and preparation and pre-decommissioning activities to date were just the beginning. We will now transition from a standby mode to an operational mode. Now the real work begins." During the next few months, NASA crews will complete the characterizing and packaging of loose equipment which will then be safely stored within the Reactor Facility until its eventual shipment offsite to Alaron, a licensed reprocessing facility in Pennsylvania. They will also begin the detailed planning required to begin removal and segmentation of the reactor internals and vessel (see article on page 2). "Our goal for this project is safety of the workers, safety of the public and the protection of the environment," Tim added. "The NRC's approval of the Decommissioning Plan allows us to proceed and achieve our goal." NASA Program Manager Frank Greco agreed, noting, "The NRC's approval of our approach reflects its confidence in the capabilities and experience of our project teams who have worked together to make this first Decommissioning milestone possible - in Safety, Design & Construction, Radiation Protection and in all the other critical aspects of this project." ■

## Pre-Decommissioning UPDATE

### A Busy 2002 First Quarter

There was no rest for the weary as the NASA Decommissioning Team continued its pre-decommissioning efforts this past winter in anticipation of the Decommissioning Plan approval. The Part 61 Characterization\* was completed in Canal E, Quadrant A and C and ground level of the Containment Vessel. As workers packaged loose equipment, minimal cutting (see Segmentation article) was necessary to fit larger pieces of equipment into the 4' x 4' x 6' B-25 boxes. "Like the Hot Cell work we completed during the summer,



Exterior view of the Reactor Facility at NASA Plum Brook Station.

we were removing loose equipment until we had the NRC's approval of the Decommissioning Plan to do more extensive work," said Tim Polich, NASA Decommissioning Project Manager.

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\*For more information on Part 61 Characterization or Activation Analysis, please see "Pre-Decommissioning & Attention To Detail" article in the January edition of Decommissioning News or on the Web at [www.nasa.gov/www/pbrf](http://www.nasa.gov/www/pbrf).

## Other ways to receive Decommissioning INFORMATION

### FACT SHEETS

Since June 1999, NASA has produced six fact sheets dealing with various aspects of plans for Decommissioning. Copies are available at public libraries throughout Erie County, at the Community Information Bank at the BGSU Firelands Library, on our Decommissioning Website at [www.grc.nasa.gov/www/pbrf](http://www.grc.nasa.gov/www/pbrf) and by calling our Information Line at 1-800-260-3838.

### COMMUNITY INFORMATION BANK

NASA has established a Community Information Bank (CIB) at the BGSU Firelands Library. The CIB serves as a permanent repository of information on the Decommissioning Project. NASA continually updates the information in the CIB, which includes fact sheets, Public Service Announcements about NASA events, minutes from Community Workgroup meetings, and copies of other decommissioning-related documents and reports. All information at the CIB is available to the public upon request.

### DECOMMISSIONING WEBSITE

Decommissioning information is available on-line. Visit us at

[www.grc.nasa.gov/www/pbrf](http://www.grc.nasa.gov/www/pbrf)

### SPEAKERS

NASA will provide speakers upon request to civic, community and school organizations throughout Decommissioning. A video or slide presentation may be presented. For further information, contact Sally Harrington through our Information Line at 1-800-260-3838, her direct line at 216-433-2037, or at [s.harrington@grc.nasa.gov](mailto:s.harrington@grc.nasa.gov).

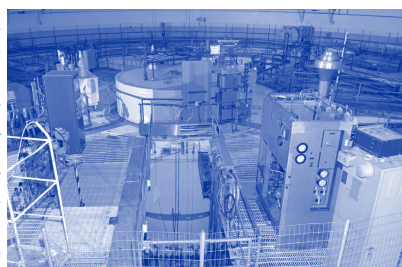
## DECOMMISSIONING: Right From The Start

### REACTOR INTERNALS & VESSEL TANK SEGMENTATION

This is first in a series of articles on segmentation and removal of the reactor internals and vessel tank.

Immediately following NRC approval of the Decommissioning Plan, the Decommissioning Team is taking on its toughest challenge yet. Beginning this summer and during the following 9 months, the focus will be on removing the reactor internals and taking apart the reactor tank. "Removing the reactor puts us in the areas with the highest radiation," said Keith Peacock, NASA Senior Project Engineer. "This part of the Reactor Facility is where 60% of the remaining radiation is located." Reducing the radiation source right from the start decreases the possibility for worker exposure during the remainder of decommissioning. "Assured access to a licensed disposal site for the waste is another reason for our concentrating on the reactor internals and vessel now," said Peacock. It is expected that the Barnwell, South Carolina disposal facility will be available for only a few more years. This would force NASA to find an alternate disposal facility and could dramatically increase costs.

Teams of experts and years of planning have paved the way for this important work to begin. For the past two years, Duke Engineering & Services, Inc. (one of the Decommissioning Team contractors) has conducted a comprehensive study to determine the best way to deal with the reactor. Cedric Child of Duke Engineering, and Manager of Reactor Removal for the Plum Brook Station Decommissioning Project, has worked on several large commercial nuclear reactor decommissioning projects such as Yankee Rowe, Connecticut and Maine Yankee. "We began our study for the Plum Brook Station reactor with an eye toward minimizing cutting the structure as much as possible," said Child. Reactor tanks



Ground view of the inside of the containment vessel, showing the top of the reactor vessel.

is a relatively small unit. Second, the core, which had been lying dormant, without fuel for almost 30 years, is encased in concrete shielding with piping running through it. These factors made shipping pieces of this reactor more logistically

feasible than taking it out intact. Third, it would be necessary to transport the intact reactor in the summer over local highways. "Along with technical considerations, we were sensitive to other potential impacts such as disrupting the Sandusky summer tourist traffic," said Child.

The study concluded that taking apart and removing the reactor internals followed by segmentation of the vessel tank was the preferred decommissioning method. Segmentation refers to the process of reducing the whole into pieces. It is used to minimize the volume of the reactor tank for optimum fit inside shipping packages, called liners that will eventually be placed inside casks for shipping. Only a handful of companies today have experience with nuclear reactor segmentation. Duke Engineering identified Wachs Technical Services, Inc. as the most qualified contractor.

Wachs has woven its work plan into the fabric of safety awareness and good work practices that have been in place at the Reactor Facility since day one. Wachs' approach to segmentation work is to use straightforward technologies and proven effective construction work practices. Trained workers, equipped with tools designed for safety, efficiency and precision, use conventional methods like unbolting, cutting, sawing and milling to reduce existing component size for packaging.

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**Do you want some news? Do you have questions or comments on decommissioning?  
CALL OUR INFORMATION LINE AT 1-800-260-3838.**

# 10<sup>th</sup>

## Decommissioning Workgroup Holds Tenth Meeting



Workgroup members hear a presentation at a meeting last year.

Last October we introduced you to our Community Workgroup, consisting of Erie County residents who represent a variety of constituencies. The Workgroup serves as a vehicle for NASA to communicate information on the project while providing Workgroup members and the larger community with an opportunity to ask questions, express concerns and provide input and suggestions. On January 15 at St. Stephen's AME Church in Sandusky

Decommissioning Project Manager Tim Polich was happy to welcome people to the Workgroup's tenth quarterly meeting. Seven Workgroup and several community members were there to hear presentations from NASA staff and contractors on a variety of topics which included: an update on Decommissioning and Pre-decommissioning Activities, Project Safety, Reactor Historic Preservation efforts and a Community Relations update.

NASA Senior Project Engineer Keith Peecook described continuing pre-decommissioning work that includes an analysis of the radiation content of metals inside the reactor (see January newsletter) and a determination of its physical condition. NASA Glenn History Officer Kevin Coleman and NASA contractors Mark Bowles and Jim Polaczynski talked enthusiastically about their Reactor Historic Preservation efforts which will include a book and a broadcast quality video (see January newsletter).

As always, Workgroup members listened attentively while also raising questions - theirs and ones they feel the community might have. Perhaps on the mind of many following the tragic events of 9-11, Workgroup member Ethel Roldan asked about Decommissioning security and safety. NASA's Keith Peecook took the opportunity to reemphasize that the Reactor Facility contains no radioactive fuel and has relatively low levels of radiation; but he also noted the seriousness with which NASA has responded to the Nuclear Regulatory Commission's call for "elevated security" which, Keith said, remains in effect. In general, Workgroup members continue to express confidence in NASA's efforts to date and plans for the future while also asking NASA to continue to share important information with them. Workgroup member Rick Graham, requested more information on the results of NASA's radiation characterization. This topic, along with an update on Decommissioning, will be discussed at a future Workgroup meeting.

Meeting minutes are available at the Decommissioning Community Information Bank at BGSU Firelands and on our Website at [www.grc.nasa.gov/www/pbrf](http://www.grc.nasa.gov/www/pbrf). ■

## COMMUNITY WORKGROUP PROFILE

### Bill Walker

Bill Walker has been Director of the Erie County Emergency Management Agency (EMA) since 1990 and a member of the Decommissioning Community Workgroup since its inception in 1999. The Perkins resident became EMA Director after serving more than 22 years in the U.S. Air Force, including 16 working in Disaster Preparedness programs.

Bill got involved with the Decommissioning Project early on and believes it has "solidified local emergency responders in working with Plum Brook Station." He thinks his position enables him to "see overall safety concerns and potential issues," and states that "NASA is doing a great job of keeping members informed of what's going on, and why. Every question I've asked has been answered." He was especially pleased by NASA's cooperation and coordination regarding last summer's shipment of low-level radioactive waste and commitment to keeping him informed of future shipments. Last August, he recalls, "I got a call from NASA saying (the shipment) was going out" to the Alaron reprocessing facility in Pennsylvania giving him time to call a hazardous materials colleague, "so we had a couple of non-NASA people around, just in case something happened." He is very confident that all future shipments will also be conducted safely.

The EMA Director has not received any questions about transportation-related issues but has gotten "25 or 30" informal questions from community members on other topics. Typically, he says, "People will come up and ask if I'm satisfied with the way NASA is progressing." He tells them he's attended briefings by NASA and based on these, "I feel this project is being conducted in the safest manner possible." He adds that when area residents hear this, "They seem to feel that if the County is satisfied...they are." Bill's confidence was enhanced by the response of NASA's Decommissioning Team members during last spring's EMA emergency exercise, conducted outside Plum Brook Station. Although the exercise did not involve the Decommissioning, he says "I appreciate all the assistance they gave us...to help stage, conduct and evaluate this drill."

In the future Bill hopes to remain a Workgroup member and to see "more interaction between NASA and local responders," even aside from Decommissioning. He notes that since last spring, the Perkins Fire Department has visited Plum Brook Station more frequently, calling this "an added benefit" and observes of the Decommissioning Team that "I've never heard anybody try to skirt an issue. NASA is winning points for being open and honest." ■

### VISIT US ON-LINE

You can find our Decommissioning Website at [www.grc.nasa.gov/www/pbrf](http://www.grc.nasa.gov/www/pbrf)



**Topics in Upcoming Issue**  
Project Update  
NASA welcomes nearby neighbors  
Workgroup member profile

*Pre-decommissioning Update (continued from page 1)*

The filled B-25 boxes are securely stored onsite for shipment scheduled later this year.

As part of the Activation Analysis\* (see footnote on page 1), NASA will conduct a Reactor Tank Entry to retrieve a physical sample for analysis by a certified laboratory. Results will be used to “anchor” or calibrate NASA’s computer modeling analysis. Said Keith Peacock, NASA Senior Project Engineer, “Getting an inside view of the tank will answer three important questions: Do the components in there match our historical inventory? What are the direct radiation and loose contamination levels? Has any corrosion occurred that will alter our intended dismantling techniques?” Entering the reactor tank after almost 30 years will provide critical information for planning the eventual removal of the tank and its internals.

As with all NASA’s decommissioning work, the Reactor Tank Entry has been painstakingly planned, undergoing a full Safety Review, ALARA (As Low As Reasonably Achievable) Review, and Critical Lift Review. The tank entry will be carefully executed with NRC officials on hand to witness the team in action. ■

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#### REACTOR TANK ENTRY

To conduct the Reactor Tank Entry, workers will turn off the dry nitrogen purge (in place since 1973 to minimize corrosion of the components). Next, they will remove three 20-ton shrapnel shields and open a flange on top of the reactor tank. All work will be done remotely by lowering a 30-foot rod attached to a video camera, radiation detection equipment, and tooling to “snip” the physical sample (about the size of a baseball) inside the tank. The tank will be re-sealed (reversing the process) when the sample has been successfully retrieved.

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*Decommissioning (continued from page 2)*

If the methods for segmentation seem conventional, it is the intricate orchestration that sets this work apart. Each step is choreographed in anticipation of the next. “It may take 3 days of set up to execute a 2-inch cut,” said Child. One of several thick documents that support this effort describes when and how the subcomponents are cut into pieces, what each piece will look like after segmentation and how each piece is packaged for safe transport and disposal. Take, for example, a length of piping inside the reactor. The radioisotope type, quantity and activity level is verified by actual measurement after segmentation and is recorded under a specific identification number for each piece of that pipe. The pieces are packaged so that the designated transport and disposal liner will have the appropriate weight limit and optimum use of space, and each piece will be fully documented. “We leave no stone unturned,” added Child.

Work on the reactor internals and vessel tank will unfold in 6 phases beginning with the Set Up and Testing Phase (referred to as Phase 0) expected to last through the summer. Phases I through V will be discussed in the next two editions of Decommissioning News. ■



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